

# USA - Colorado Greenhouse Gas Emissions and Energy Management for Manufacturing Regulation

## General Information

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### ETS Description

In October 2023, the Colorado Air Quality Control Commission (AQCC) adopted a regulation establishing an ETS covering large in-state manufacturers, beginning with the first compliance year in 2024. In December 2024, the AQCC adopted another regulation expanding the ETS's covered entities, beginning in the year 2028, to include oil and gas midstream fuel combustion equipment operations. The GHG crediting and tracking system, referred to as "GHG CATS", came into force in November 2024. The regulations are designed to support the achievement of Colorado's statutory industrial and manufacturing sector-wide as well as its economy-wide GHG emission reduction goals. The regulations prioritize benefits to disproportionately impacted communities through reductions of locally harmful air pollutants.

The AQCC initially set reduction requirements for large manufacturing emitters through the "Greenhouse Gas and Energy Management for Manufacturing regulation" (GEMM 1) beginning in 2021, under the statutory direction of Colorado House Bill 19-1261. The GEMM 1 regulation applied to energy-intensive, trade-exposed (EITE or GEMM 1) manufacturing stationary sources that emitted equal to or greater than 50,000 tCO<sub>2</sub>e annually. This threshold was lowered to 25,000 tCO<sub>2</sub>e with the adoption of an amendment to the GEMM regulation (GEMM 2).

The AQCC expanded the GEMM 1 rule through the adoption of GEMM 2 in October 2023. The GEMM 2 regulation currently covers 17 manufacturing facilities (emitting equal to or greater than 25,000 tCO<sub>2</sub>e) in addition to the four facilities that fall in the EITE (GEMM 1) categorization. While GEMM 2 institutes absolute emission reduction requirements, EITE (GEMM 1) sources adhere to intensity-based emissions limitations.

The AQCC further expanded the entities covered with the adoption of a rule in December 2024 covering GHG emissions from oil and gas midstream fuel combustion equipment, such as engines, turbines, and heaters. Equipment operators are subject to absolute emissions caps and may participate in the market beginning in 2028. This will constitute a third covered group in addition to GEMM 1 and GEMM 2, expanding Colorado's ETS to cover over 60% of the industrial and manufacturing sector's emissions.

### ETS Status

in force

### Jurisdictions

Colorado

### Year in Review

In May 2025, the Air Pollution Control Division (APCD) issued the first credits to GEMM 2 facilities based on the extent to which their respective annual emissions were below their 2030 emissions reduction obligations. This enabled facilities to begin trading bilaterally or purchase units through the annual auction.

Colorado conducted its first annual auction for regulated industrial and manufacturing sources (GEMM 1 and GEMM 2) in June 2025 for the 2024 vintage year's GHG credits. The auction included two rounds with five entities participating as bidders and three as offerors. A total of 2,760 GHG credits matched through both rounds, with settlement prices of USD 24.90 per credit in the first round and USD 25 in

the additional round, resulting in a total value for the auction of USD 68,739.

Additionally, two bilateral transactions occurred in 2025, resulting in a total of 28,644 credits traded outside of the auction. A summary of bilateral transaction prices will be released in 2026.

### **Sectoral coverage**

Industry

## **Emissions & Targets**

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### **Overall GHG Emissions excl. LULUCF (MtCO<sub>2</sub>e)**

118.4 MtCO<sub>2</sub>e (2023)

### **GHG reduction targets**

**By 2025:** 26% reduction below 2005 levels

**By 2030:** 50% reduction below 2005 levels

**By 2035:** 65% reduction below 2005 levels

**By 2040:** 75% reduction below 2005 levels

**By 2045:** 90% reduction below 2005 levels

**By 2050:** Net zero

(“Colorado Revised Statutes 25-7-102(2)(g)(I)”)

### **Current Allowance Price (per t/CO<sub>2</sub>e)**

Average secondary market price at auction (2025): USD 24.91 \*

\* The Colorado auction matches bidders.

## **Size & Phases**

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### **Covered emissions (2023)**

3.30%

### **Verified ETS Emissions**

3.90MtCO<sub>2</sub>e

### **GHGs covered**

CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, SF<sub>6</sub>, HFCs, PFCs, NF<sub>3</sub>

### **Phases**

#### **GEMM 1:**

**PHASE 1:** Five years (2025 to 2029)

**PHASE 2:** Five years (2030 to 2034)

**PHASE 3:** Five years (2035 to 2039)

**PHASE 4:** (2040 onwards)

## **GEMM 2:**

**PHASE 1:** Three years (2024 to 2026)

**PHASE 2:** Three years (2027 to 2029)

**PHASE 3:** (2030 onwards)

## **MIDSTREAM:**

Annual (2030 and thereafter)

### **Cap or total emissions limit**

For EITE or GEMM 1 facilities, the emissions limit under the Colorado GEMM regulation changes as a function of production (output) for each EITE or GEMM 1 facility. The total emissions limit is the sum of the facility bottom-up annual emissions limits (EITE or GEMM 1) and facility emissions below 2030 reduction targets (GEMM 2) for all covered entities.

The total emissions limit under the Colorado midstream oil and gas regulation is 3,930,228 tCO<sub>2</sub>e by 2030 and each year thereafter.

### **Sectors and thresholds**

**SECTORS:** GEMM 1 and GEMM 2 regulations cover high-emitting stationary sources in the industrial and manufacturing sector.

**GEMM 1 FACILITY INCLUSION THRESHOLDS:** 25,000 tCO<sub>2</sub>e and EITE source classification

**GEMM 2 FACILITY INCLUSION THRESHOLDS:** 25,000 tCO<sub>2</sub>e

### **MIDSTREAM OPERATOR INCLUSION THRESHOLDS:**

All midstream fuel combustion equipment operators will be subject to emissions caps that take effect in 2030; operators with emissions greater than 25,000 tCO<sub>2</sub>e in 2021 will be subject to scaled reduction requirements via their caps.

### **Point of regulation**

Point source (industrial and manufacturing stationary sources)

### **Type of entities**

Manufacturing stationary sources, midstream fuel combustion equipment (begin in 2028)

### **Number of entities**

**GEMM 1:** 4 facilities (2025)

**GEMM 2:** 17 facilities (2025)

## **Allowance Allocation & Revenue**

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### **Allowance allocation**

GEMM 1 facilities are allocated GHG reduction credits annually, free of charge, based on how much less the facility's annual direct GHG emissions, in tCO<sub>2</sub>e, are compared with its emissions limitation in the relevant year.

GEMM 2 facilities are allocated GHG reduction credits annually, free of charge, based on how much lower the facility's annual direct GHG emissions are compared with its 2030 GHG emissions requirement.

From 2028, midstream fuel combustion equipment operators will be allocated GHG reduction credits annually, free of charge, based on how much lower the operator's annual direct GHG emissions from midstream fuel combustion equipment are compared with its 2030 GHG emissions cap.

GEMM 1 and GEMM 2 facilities are allocated credits by the first Tuesday of May each year. Starting in May 2028, midstream fuel combustion equipment operators will also be allocated credits by the first Tuesday of May each year.

From the outset of the trading system, GEMM 2 facilities may generate credits through onsite carbon capture and storage projects, subject to an approved protocol. From 2031, GEMM 2 facilities will also be able to generate GHG reduction credits through offsite direct

air carbon capture projects, subject to an approved protocol. Facilities that generate GHG reduction credits may use the credits toward future compliance obligations or trade the credits to other GEMM facilities.

### **Use of Revenues**

The Colorado ETS does not collect revenues or handle the exchange of funds from buyer to seller. The auction facilitates the trade, but the financial transaction is done directly between the facilities.

## **Flexibility & Linking**

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### **Offset credits**

The use of offsets is not allowed as a compliance option.

### **Banking and borrowing**

EITE (GEMM 1) and GEMM 2 facilities can bank GHG credits for up to three years from the date generated.

Borrowing is not allowed.

### **Links with other Systems**

The Colorado industrial and manufacturing GHG credit trading system is not linked with any other system.

## **Compliance**

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### **Compliance mechanism**

Each covered facility/operator must surrender one compliance unit (GHG credit) per tCO<sub>2</sub>e that exceeds its annual emissions limit or compliance obligation in the relevant compliance period.

An EITE (GEMM 1) facility's annual emissions limit for a compliance year is calculated by using its previous year's production totals and emissions intensity requirement and applying a 5% mass-based emissions reduction. The annual emissions limit varies each year depending on the production level of the facility. The facility's emissions intensity requirement is reflective of best available control technology and industry standards and is updated every five years.

A GEMM 2 facility's GHG emissions requirement is based on its historical mass-based emissions reductions between 2015 and its baseline year (either 2021 or 2022, whichever has the higher emissions) and the facility's share of emission contributions to the GEMM 2 group's cumulative baseline. These two factors were used to determine the interim (2024 to 2029) and 2030 emissions requirements such that the 17 facilities collectively achieve a 20% mass-based reduction in emissions by 2030 relative to the group's aggregate emissions in 2015.

Beginning in 2030, before they can access the trading system, GEMM 2 facilities must implement their portfolio of onsite, technically feasible emissions reduction measures as well as undertake additional GHG and harmful air pollutant reductions if the facility is located near a disproportionately impacted community. The Colorado Department of Public Health and Environment's Air Pollution Control Division (APCD) reviews and approves the GHG reduction plans.

Under the regulation adopted in December 2024, midstream fuel combustion equipment operators' GHG emission caps starting in 2030 are based on recent actual emissions, avoided emissions from recent voluntary electrification projects, and a sliding scale that places relatively more reduction burdens on larger companies. Smaller companies (those emitting less than 25,000 tCO<sub>2</sub>e in 2021) are assigned an emission cap that does not require reductions *per se* but instead requires them to maintain applicable GHG emissions at the levels of a recent representative year.

### **Compliance Period**

**GEMM 1:** One year

**GEMM 2:** Two three-year compliance periods (2024 to 2026 and 2027 to 2029) with one-year compliance periods from 2030 and beyond

### **Monitoring, Reporting, Verification (MRV)**

**MANUFACTURING STATIONARY SOURCES FRAMEWORK:** The GHG emissions reporting rules for both GEMM 1 and GEMM 2 facilities are outlined in Colorado's "Greenhouse Gas Reporting and Emission Reduction Requirements" regulation.

## **GEMM 1:**

**MONITORING:** Beginning in 2026, EITE (GEMM 1) facilities must submit a report each year including data regarding the previous year's total emissions, total units of production, and emissions rate per product.

**REPORTING:** Emissions reports must be submitted by May of each year.

**VERIFICATION:** EITE (GEMM 1) facilities must have a third-party conduct energy and GHG emission control audits every five years to establish and determine whether best available emissions control technology (BAECT) and best energy management practices (BMP) are being employed. The audit reports require both GHG BAECT and energy BMP analyses that identify and rank all technically feasible control technologies and strategies and energy efficiency measures.

## **GEMM 2:**

**MONITORING:** Beginning in 2025, GEMM 2 facilities must submit a report each year, including data regarding the previous year's total direct emissions. GEMM 2 facilities must also submit GHG reduction plans that identify what technically feasible portfolio of onsite measures at or below the cost-effectiveness threshold established in the rule they plan to use to meet their emission reduction requirements.

**REPORTING:** Emissions reports must be submitted by the end of March each year. Compliance reports as well as GHG reduction plan progress and compliance reports must be submitted by the end of September for each compliance period (2024 to 2026 to be submitted in 2027, 2027 to 2029 to be submitted in 2030, and annually thereafter).

**VERIFICATION:** GHG reduction plans must undergo a technical and regulatory review by an independent third party.

## **OIL AND GAS MIDSTREAM:**

**FRAMEWORK:** The rules for reporting GHG emissions for midstream oil and gas fuel combustion equipment operators are outlined in Colorado's "Control of Emissions from Oil and Gas Emissions Operations" Regulation No. 7 (5 CCR 1001-9).

**MONITORING:** Beginning in 2028, midstream fuel combustion equipment operators seeking to generate credits must submit a report by the end of March each year, including data regarding the previous year's total direct emissions, in order to be eligible to generate credits for the previous year. Additionally, all midstream fuel combustion equipment operators will be required to submit an annual report that describes their emissions and plans for reductions to achieve compliance

**REPORTING:** Midstream fuel combustion equipment operator emissions reports to generate credits will be due by the end of March each year. The emissions reports describing their plans for reductions to achieve compliance will need to be submitted by the end of June each year.

## **Penalties and enforcement**

**GEMM 1:** In the event of noncompliance, EITE (GEMM 1) facilities will need to surrender three GHG credits for every tCO<sub>2</sub>e emitted in excess of the facility's annual emissions limit and may be subject to a civil penalty or other enforcement action.

**GEMM 2:** In the event of noncompliance, a GEMM 2 facility's GHG emissions reduction requirement for the relevant compliance period will be adjusted downwards by at least two times the amount that the facility exceeded its emissions reduction requirement. The resulting increased compliance obligation must be achieved within three years of the period of non-compliance. GEMM 2 facilities not in compliance for a particular year must submit a mitigation plan by the end of the following calendar year. Civil penalties and other enforcement actions may also be assessed.

**OIL AND GAS MIDSTREAM:** In the event of noncompliance, the Division will pursue appropriate enforcement measures through the existing oil and gas compliance and enforcement program.

## **Market Regulation**

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### **Market Design**

**MARKET PARTICIPATION:** Compliance entities

**MARKET TYPES:**

**Primary:** Since May 2025, GEMM 1 and GEMM 2 facilities receive credits corresponding to the extent to which their emissions are below their 2030 emissions reduction obligations on the first Tuesday of May each year. Beginning in 2028, midstream fuel combustion equipment operators will receive credits corresponding to the extent to which their emissions are below their 2030 emissions reduction obligations.

**Auction:** An annual auction is held in June each year. Bidders may not also be offerors for the same vintage year of credits and vice versa. APCD administers the auction but does not handle the money for any transactions.

**Secondary:** Participants may bilaterally contract between themselves through the GHG credit trading system that was established in November 2024. APCD helps facilitate direct transfers of GHG credits between covered entities but does not handle the money for any transactions.

**Retirement:** All participants may retire credits and count these towards their own compliance within the three-year banking period.

## Other Information

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### Institutions involved

**Colorado Air Quality Control Commission:** Responsible for holding hearings and adopting regulations on air quality matters consistent with statutory direction.

**Colorado Department of Public Health and Environment Air Pollution Control Division:** Responsible for developing, administering, and enforcing the adopted AQCC regulations based on a mandate from the Colorado legislature.

### Regulatory Framework

[Greenhouse Gas Emissions and Energy Management for Manufacturing Phase 1 and Phase 2 Regulation \(AQCC Regulation No. 27\)](#)

[Control of Emissions from Oil and Gas Emissions Operations \(AQCC Regulation No. 7\)](#)

[Climate Action Plan to Reduce Pollution \(House Bill 19-1261\)](#)

[Greenhouse Gas Emission Reduction Measures \(Senate Bill 23-016\)](#)

[Environmental Justice Act \(House Bill 21-1266\)](#)

[Collect Long-Term Climate Change Data \(Senate Bill 19-096\)](#)

### Evaluation / ETS review

GEMM 1 and 2 have achieved a combined 23.4% reduction in emissions from 2015 levels in 2024. This equates to 1.2 MtCO<sub>2</sub>e reduced since 2015.

The AQCC has directed the Division to evaluate the trading program and to identify any modifications that may be necessary. In addition, the AQCC directed the Division to report on the following before the end of December 2025:

- the status of the trading program;
- and the co-pollutant reductions associated with the credits generated for the trades.

The Division is scheduled for a request for rulemaking before the AQCC in February 2026. At the request, the AQCC will decide whether to move forward with a formal rulemaking in July 2026.

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